

WHAT IS CLAIMED IS:

1. A method for determining priorities in a network device having a receiver and a forwarding engine, comprising:

receiving first data from the receiver and second data from the forwarding engine, the first and second data relating to a data frame received by the network device;

5 determining whether the first data contains first priority data;

assigning a first priority to the data frame based on the first priority data when the first data contains the first priority data;

determining, when the first data does not contain the first priority data, whether the second data contains second priority data; and

10 assigning a second priority to the data frame based on the second priority data when the second data contains the second priority data.

2. The method of claim 1 further comprising:

assigning, when the second data does not contain the second priority data, a low priority indication to the data frame.

3. The method of claim 1 further comprising:

merging the first and second data into a register.

4. The method of claim 3 further comprising:

transferring the merged first and second data to an output queue based on the assigned priority.

5. The method of claim 1 wherein the determining whether the first data contains priority data includes:

determining whether the first priority data is valid, and

5                    wherein the determining whether the second data contains priority data includes:

determining whether the second priority data is valid.

6.        The method of claim 1 wherein the first data includes a first field configured to store validity information, a second field configured to store a frame pointer, and a third field configured to store the first priority.

7.        The method of claim 6 wherein the second data includes a first field configured to store validity information, a second field configured to store a forwarding engine frame pointer, a third field configured to store forwarding information, and a fourth field configured to store the second priority.

8.        A network device comprising:

a port filter configured to receive a data frame and generate first data relating to the data frame;

a first logic device configured to generate second data for the received data  
5    frame; and

a second logic device configured to receive the first data and the second data, determine whether the first data contains a valid first priority value, assign the valid first priority value to the data frame when the first data contains the valid first priority value, determine, when the first data does not contain a valid first priority value, whether the second  
10   data contains a valid second priority value, and assign the valid second priority value to the data frame when the second data contains the valid second priority value.

9.        The network device of claim 8 wherein the second logic device is further configured to:

assign, when the second data does not contain the valid second priority value, a low priority value to the data frame.

10. The network device of claim 8 wherein the second logic device is further configured to:

merge the first and second data into a register.

11. The network device of claim 10 further comprising:

a plurality of output queues associated with different levels of priorities, and wherein the second logic device is further configured to:

transfer the merged first and second data to one of the plurality of output queues based on the assigned priority value.

12. The network device of claim 8 wherein the second logic device comprises:

a register associated with the port filter and configured to store the first and second data.

13. The network device of claim 8 wherein, when determining whether the first data contains a valid first priority value and when determining whether the second data contains a valid second priority value, the second logic device is configured to:

determine that the priority value in the first and second data is valid based on validity information in the first and second data.

14. The network device of claim 8 wherein the first logic device includes a forwarding engine.

15. The network device of claim 8 further comprising:

a plurality of transmitters configured to transmit the data frame based on the assigned priority value.

16. The network device of claim 8 wherein the first data includes a first field configured to store validity information, a second field configured to store a frame pointer, and a third field configured to store the first priority value.

17. The network device of claim 8 wherein the second data includes a first field configured to store validity information, a second field configured to store a frame pointer, a third field configured to store forwarding information, and a fourth field configured to store the second priority value.

18. A system for assigning priorities to packets, comprising:

a plurality of receiver modules configured to receive packets and generate first data relating to the packets;

first logic configured to generate second data for the packets;

a plurality of registers corresponding to the receiver modules and configured to store the first and second data for the packets received by the corresponding receiver modules; and

second logic configured to determine, for each of the packets, whether the first data includes a priority indication, assign the priority indication to the packet when the first data includes a priority indication, determine whether the second data includes a priority indication when the first data is determined not to include the priority indication, assign the priority indication from the second data to the packet when the second data is determined to include the priority indication, and assign a low priority indication to the packet when the second data is determined not to include the priority indication.

19. The system of claim 18 wherein the second logic is further configured to:

transfer the first and second data to an output queue based on the assigned priority indication.

20. The system of claim 18 further comprising:

a transmitter configured to transmit the packet based on the assigned priority indication.